

Sustainable Coastal Development 2013 Focus Team Report

BACKGROUND

The 2009-2013 National Sea Grant Strategic Plan (Strategic Plan) identified three national goals for the Sustainable Coastal Development (SCD) focus area: 1) healthy coastal economies that include working waterfronts, an abundance of recreation and tourism opportunities, and coastal access for all citizens; 2) coastal communities that make efficient use of land, energy, and water resources and protect the resources needed to sustain coastal ecosystems and quality of life; and 3) coastal citizens, community leaders, and industries that recognize the complex inter-relationships between social, economic, and environmental values in coastal areas and work together to balance the multiple uses and optimize environmental sustainability.

Annually, each Sea Grant (SG) Program submits short “impact statements” (impacts) via the National Sea Grant Office reporting process (PIER). Impacts describe significant and verifiable economic, societal and/or environmental benefits of SG work and how efforts have made a difference in the lives of coastal residents, communities, and environments. The impact reporting process has become an increasingly important means of enhancing visibility, demonstrating accountability, generating support and building a reputation as a focused, productive and successful program.

This 2013 Focus Team Report examines SCD impacts that were produced in the 2012 reporting year of February 1, 2012- January 31, 2013. Examination of the impacts allows the focus team to achieve the following objectives:

- 1) Assess SG’s progress towards its strategic plan focus area goals and outcomes;
- 2) Identify national impacts that should be highlighted in communication products and reporting;
- 3) Pinpoint gaps to achieve the focus area goals outlined in the Strategic Plan; and,
- 4) Identify emerging issues and new opportunities for Sea Grant.



NETWORK PERFORMANCE

Since 2009, the Sea Grant programs have tracked the impacts and accomplishments associated with all four focus areas. These data are reported as a performance measure, as part of the Government Performance and Results Act¹ (GPRA). The Table below shows the number of communities (both new and recurring) that, between 2009 and 2012, adopted and/or implemented sustainable practices and policies. The data suggest an increased trend since 2009, meaning that the Sea Grant network's activity has been successfully implemented.

SCD Network Performance 2009-12	
	<i>Number of coastal communities who have adopted/implemented SCD practices and policies²</i>
2009	435
2010	368
2011	896
2012	1272

ORGANIZATION OF REPORT

SECTION ONE: The first and second objectives are reported and analyzed according to each of the three SCD Goals. An introductory summary of findings is provided. Then, identified themes for each are goal area listed with the representative impacts statements.

SECTION TWO: The second section identifies previous and newly identified gaps in Sea Grant's work. Gaps represent both the 2012 reporting year as well as those identified through the previous years in the Plan.

SECTION THREE: This section reports on emerging themes and areas of opportunity for the Sea Grant network. The identified themes and opportunities represent both work achieved by the Sea Grant programs and the National Sea Grant Office. This section concludes with general comments from focus team members.

¹ <http://www.whitehouse.gov/omb/mgmt-gpra/index-gpra>

² This measure tracks communities that have made strides in sustainable development with Sea Grant aid – moving beyond analysis and planning and into implementation.

FOCUS TEAM MEMBERS

NAME	TITLE	AFFILIATION
Mike Liffmann	Chair	National Sea Grant Office
Brian Miller	Vice-Chair	Illinois-Indiana Sea Grant
Chris Hayes	Alternate Chair	National Sea Grant Office
Hank Hodde	Coordinator	National Sea Grant Office
John Carey	Member	Hawaii Sea Grant
Jim Falk	Member	Delaware Sea Grant
Kristen Grant	Member	Maine Sea Grant
David Hart	Member	Wisconsin Sea Grant
Jim Hurley	Member	Wisconsin Sea Grant
John Jacob	Member	Texas Sea Grant
Marty Jaffe	Member	Illinois-Indiana Sea Grant
Tom Murray	Member	Virginia Sea Grant
Mike Orbach	Member	National Sea Grant Advisory Board
Stephanie Showalter-Otts	Member	National Sea Grant Law Center
Sarah van der Schalie	Member	NOAA Office for Coastal Management

SECTION ONE: Impact Goals and Themes

GOAL 1: Healthy coastal economies that include working waterfronts, an abundance of recreation and tourism opportunities, and coastal access for all citizens.

The focus team recognized the notable momentum in impacts throughout the past years in working waterfronts, coastal tourism, coastal access, and economic prosperity. At the start of the Strategic Plan, few programs had impacts relating to these important topics, but now many more programs are involved in this work. Programs are collaborating through academic, regional networks, and communities of practice to increase attention and devote more resources towards tangible impacts in coastal communities. Many SG programs now have well-known specialists and agents who provide much needed information to decision-makers in communities. These experts are frequently the go-to resources for coastal communities and constituents. Also, Sea Grant programs are continuing to collaborate with federal and state agencies, local authorities and organizations, and the private sector.

THEME: Preserving Working Waterfronts

Cordova Clean Harbor Project

ALASKA SEA GRANT (AKSG) Marine Advisory agent Torie Baker facilitated a harbor education and outreach program for citizens and local organizations wishing to improve water quality in the harbor, minimize harbor trash, and increase awareness of harbor services. During the summer of 2012 she led development and dissemination of an online and in-person survey administered by volunteers, resulting in 334 harbor users identifying issues, attitudes about harbor conditions, and possible solutions. Now, the Cordova, Alaska, harbor is moving toward a comprehensive trash and pollution mitigation program through the Cordova Clean Harbor Project.

Sea Grant Provide Leadership to Launch the National Working Waterfronts Network

Since 2007, Sea Grant has provided leadership, offered technical assistance, and facilitated networking opportunities to address working waterfront issues around the country. On the national level, these activities have included the three national symposiums, the development of the Sustainable Working Waterfronts Toolkit, and the launch of the National Working Waterfront Network (NWWN). As a result of these efforts, Sea Grant has raised the visibility of working waterfront issues nationally, stakeholders are utilizing Sea Grant information to improve decision-making, and working waterfront-related legislation has been introduced and enacted at the local, state, and federal level. [LINK](#)

THEME: *Strengthening Coastal Tourism*

Southeast Alaska Invasive Species Ecotour Grows Larger In Second Year

ALASKA SEA GRANT (AKSG) helped Allen Marine Tours, a Southeast Alaska charter boat and nature ecotourism company, incorporate invasive species monitoring into its 2012 tourism offerings. The Experiential invasive species education on Allen Marine Tour's Alaskan Wilderness Survival excursions reached 375 visitors in 2012, up from 134 people who took the tour in 2011. The increase allowed the company to hire four new employees for the season, and significantly increased monitoring for marine invasive species.

Delaware Sea Grant Helps Create and Support Heritage Bus Tours to Extend Reach of Coastal Visitors and Expand Business Opportunities in Historic Communities in Western Sussex County, DE

A tourism research project funded by the University of Delaware Sustainable Coastal Communities Initiative (SCCI), led by **DELAWARE SEA GRANT** (DESG), was released in 2008. In February 2009 a half-day workshop to incorporate heritage tourism with southern Delaware tourism was held and a full-day conference was convened in May 2009. These workshops were organized by SCCI, DESG, and Southern Delaware Tourism to help stimulate and enhance economic opportunities for historic communities and focused on developing several heritage tourism itineraries throughout Sussex County, Delaware. In 2012, there were five scheduled tours from June through October.

Florida Sea Grant Program Helps Charter Boat Captains Launch New Eco-Friendly Businesses

FLORIDA SEA GRANT (FLSG) extension teamed up with the Space Coast Office of Tourism to develop an ecotourism certification program for local boat captains. The program helps the captains and their businesses and gives them an opportunity to provide a different kind of chartering experience to clientele. The tours focus on the enjoyment and conservation of the space coast's ecological and historical waterways. Seven boat captains have completed this program and have started a joint business called Space Coast Boating Adventures.

Creation of a New Funding Model for the Office of Tourism Ohio

Tourism in Ohio is a \$40 billion industry. Despite its importance in diversifying and supporting the Ohio economy, government support for the state tourism office lags that of other states in Ohio's key market areas. The budget for marketing Ohio's tourism businesses and experiences was among the lowest in the country. Because of its expertise and experience in the tourism industry, **OHIO SEA GRANT** (OHSG) facilitated long-term discussions involving creation of a new funding model for the Ohio Office of Tourism to market the state. In 2012, the Ohio Office of Tourism's FY 2013-14 budget doubled to \$10 million based on the performance model of funding marketing efforts.

Ohio Tourism Leadership Academy

OHIO SEA GRANT (OHSG) developed a leadership program for emerging Ohio tourism industry leaders to become involved in shaping the future of the industry. Eighty percent of graduates campaigned for leadership positions within three years of graduation and have run for local elected offices, statewide association board seats, or regional boards. Two earned accolades from national industry associations.

An alumni association of graduates has formed to collaborate in policy activity, mentor new class members, perform community service, and maintain relationships forged during their Ohio Tourism Leadership Academy experience. In late 2012, members of the tourism industry have ranked the program as one of the top programs in the state of Ohio.

THEME: *Improving Coastal Access for the Public*

Connecticut Sea Grant's Collaboration with CT DoT to Assess Natural Phenomena as Determiners of Mean High Tide Contributes to the Re-Definition of the Connecticut Coastal Jurisdiction Line

A **CONNECTICUT SEA GRANT** (CTSG) collaboration with the CT Department of Transportation ruled out natural phenomena as a definitive means by which “mean high tide” can be determined for regulatory purposes, resulting in a 2012 Public Act that redefines the coastal permit jurisdiction based on elevations and accepted surveying practices.

Boating Decision-Support System Helps Government Agencies Conduct Science-Based Waterway Maintenance and Public Access Planning

For the past decade **FLORIDA SEA GRANT** (FLSG) has partnered with Florida Fish and Wildlife Conservation to conduct regional spatial profiles of recreational boating, focusing on areas where recreational boating is most intense and impacts most prevalent (e.g., Indian River Lagoon, Tampa and Sarasota Bays, Greater Charlotte Harbor, Estero Bay). The information that boaters provided has been used to develop a Recreational Boating GIS. This new system now maps popular boating traffic corridors and destination hot-spots, which gives counties insight on where problems may occur with areas of environmental concern, such as manatee and seagrass protection zones. Also, the Recreational Boating GIS has helped government and management agencies evaluate permits for waterway maintenance and marina and private dock construction.

Helping Coastal Communities Benefit Economically From Retaining Public Access To Waterways And Waterfronts

FLORIDA SEA GRANT (FLSG) recently initiated a program to support planning initiatives that engage citizens and result in direct social or economic benefits to rural coastal communities. For the pilot initiative in Taylor County, Florida Sea Grant partnered with the Taylor County UF/IFAS Extension Service to provide technical assistance to the County in support of a user and economic assessment of existing public waterway access facilities (e.g. boat ramps). As a result, the boat ramp study led to public infrastructure improvements that generated \$283K in economic impact to the Taylor County economy.

Maine Sea Grant's Coastal Access Legal Research and Outreach Applied to Solve Conflict

Local stakeholders need cooperative approaches to resolving coastal access issues. Funded by the National Sea Grant Law Center, **MAINE SEA GRANT** (MESG) worked with the University of Maine School of Law, as well as state and nonprofit agencies, to conduct legal research that was translated and made available to coastal stakeholders through a website and regional outreach workshops. Since its development, the website has been referenced during pending law, and as a result, coastal towns are able to settle disputes and find cooperative solutions with beachfront owners. [LINK](#)

THEME: *Enhancing Economic Prosperity*

Alaska Sea Grant Helps Entrepreneur Navigate Zoning Restrictions to Open a New Seafood Processing Plant

An **ALASKA SEA GRANT** Marine Advisory Program agent provided legal research and assistance to a Bristol Bay seafood processor, Nakeen Homepack, to help navigate local planning and zoning restrictions. This newly acquired information came when there was opposition to the operation, which expressed the facility was located in a subdivision with restrictions and covenants that prohibited fish processing. Based on public support and the status of the covenants and restrictions, the processor was granted her site development permit and operated during the 2012 salmon season. She was able to process over 30,000 pounds of salmon and hired five seasonal employees.

Helping Lawn and Pond Maintenance Businesses Keep Their Operation Licenses

A new program developed by **FLORIDA SEA GRANT** (FLSG), “Landscaping on the Edge,” is training lawn care and natural area maintenance providers on how to properly apply fertilizers and pesticides to control weeds in coastal and aquatic environments. This course allowed 48 professionals to pass mandatory licensing exams and helped to sustain their jobs and small businesses. The 48 handlers that participated have an annual mean wage of \$30,890.00. Thus, the program has helped to sustain an estimated \$1,400,000 in earnings.

Technical Assistance for Oyster Growers Loan Program

MARYLAND SEA GRANT (MDSG) extension agents provided technical assistance to Maryland watermen to help them apply for and receive start-up loans worth \$717,000 to launch new oyster aquaculture businesses, creating 36 businesses and 80 jobs in Maryland. [LINK](#)

Great Lakes Shipping and Ballast Water Regulatory Action

In August 2012, the sixth meeting of the Great Lakes Ballast Water Collaborative was held in Duluth, MN, and sponsored in part by the Mid Continental EPA Lab and **MINNESOTA SEA GRANT** (MNSG). Approximately 85 representatives from the shipping industry, ballast water treatment technology industry, state and federal governments, and academia attended the two-day meeting. The goal of the meeting was to discuss ways to maintain a cost-effective modern shipping industry while preventing invasive species from entering the Great lakes. Sea Grant provided information on Great Lakes’ ballast water issues and their contributions have enabled the Great Lakes Ballast Water Collaborative to conduct and document science-based and reality-driven discussions that influence national and international ballast water management. [LINK](#)

Charter Captains Gain Business Tools to Lure New Customers and Profits

For 31 years **OHIO SEA GRANT** (OHSG) has organized the annual Ohio Charter Captains Conference. Training needs are identified via Ohio Sea Grant charter captain surveys. In 2012, 89% of captains responding to a survey, reported improving their operation based on information presented at the conference, 77% reported modifying a practice based on what they learned, and 31% report increased

profitability based on information they received at the conference. This has brought in more money to Ohio's coastal economy and provided a better product for visitors to Lake Erie.

Washington Sea Grant-Brokered Lane Agreements between Crab Fishermen and Towboat Companies Save About \$1.6 Million per Year

WASHINGTON SEA GRANT (WASG) brokered lane agreements between West Coast crab fishermen and towboat companies continues to improve maritime safety and save an estimated \$1.6 million per year by decreasing the need for crab gear replacement and reducing towboat repair costs . WSG staff also facilitated discussions between marine industry representatives, the National Weather Service, and the U.S. Coast Guard, leading to improved marine weather forecasting products and improved coastal bar closure policies.

THEME: *Promoting Economic Development*

Ho’Opili Development Project in West Oahu That Hawaii Sea Grant Assisted Received Land Use Commission Approval to Move Forward

Over seven years ago, **HAWAII SEA GRANT** (HISG) was invited by the City and County of Honolulu Department of Planning and Permitting to participate in community meetings addressing developer D. R. Horton’s proposed designs for Ho’opili, a 11,500 home master planned development. The project involved Hawaii Sea Grant as the initiator and organizer, Environmental Protection Agency’s Office of Sustainable Communities as the provider of state-of-the-art community design expertise, the City and County of Honolulu and its Department of Planning and Permitting, local and national developers, particularly D. R. Horton, and several community and transportation design firms with which Hawaii Sea Grant partnered. The Ho’opili project was sustainably redesigned as a result of these interactions. In June 2012, the state Land Use Commission voted to reclassify about 1,500 acres of agricultural lands belonging to D. R. Horton for development. The project will create 27,000 jobs in construction and related services over a 20-year period, as well as 7,000 permanent jobs.

Making the Fabric Stronger: Using Collaboration and Natural Resources to Adapt to Ecological and Economic Changes

MICHIGAN SEA GRANT (MISG) research and outreach is helping small coastal towns work together to make new investments in outdoor recreation — strengthening their regional economies and touting coastal resources. Two communities have initiated a pilot “Trail Towns” project to promote walking, biking and paddling and have submitted a proposal to expand this work to other coastal towns. Another community has already implemented some of the branding, marketing and tourism suggestions, and integrated results into strategic planning for Port Sanilac. These are just a couple of activities that the communities are undertaking to attract visitors to their towns.

GOAL 2: Coastal communities that make efficient use of land, energy, and water resources and protect the resources needed to sustain coastal ecosystems and quality of life.

The SCD Focus Team highlighted very good examples of Sea Grant work's leading to tangible community-level actions. These impacts are reflected in the adoption of policies or ordinances that will help communities reduce pollution and improve water quality, and help manage these important natural resources. Communities are also improving their resilience to challenges posed by coastal hazards or limited resources. The focus team also highlighted outstanding examples of incorporating green infrastructure and land conservation as best management practices that support community efforts to manage vulnerability and restore essential landscapes.

THEME: Reducing Pollution, Improving Water Quality

Advancing Water Quality Management Plans with Education and Outreach

The Vadnais Lakes Area Water Management Organization completed a watershed-based Total Maximum Daily Load (TMDL) plan that targeted large reductions for excessive nutrients (five lakes) and for excessive bacteria (one stream). To support the plan, the Management Organization partnered with **MINNESOTA SEA GRANT** (MNSG) and others through the NEMO (Nonpoint Education for Municipal Officials) program. Together, the partners designed and implemented an outreach and education program for elected and appointed officials about the connection between land use and water quality. Since partnering, the TMDL plan received broad support and local acceptance because of effective outreach and education.

Work with Municipal Officials Improves Policies Related to the Clean Water Act

MINNESOTA SEA GRANT (MNSG) coordinates, designs, and leads NEMO (Nonpoint Education for Municipal Officials) programming for local leaders in cooperation with Minnesota Extension. Northland NEMO (www.northlandnemo.org) uses approaches such as workshops-on-the-water and tools such as the Watershed Game. Training conducted by MNSG in "Linking Land Use to Water Quality" and the Watershed Game, and a new presentation focused on rural communities, has provided trainers with the tools to reach new parts of the state. Train-the-trainer sessions during 2012 expanded the use of the Watershed Game to 10 states and 85 facilitators, with more sessions being planned. These actions have increased the knowledge of local elected leaders that have consequently implemented new plans, practices, and policies to meet the requirements of the Clean Water Act in their communities.

The Minnesota Clean Marina Program

MINNESOTA SEA GRANT (MNSG) led a state-based effort to create the Minnesota Clean Marina Program, which offers information, guidance, and technical assistance to marina operators, local governments, and recreational boaters on Best Management Practices that can be used to prevent or reduce pollution. In 2012, The Minnesota Clean Marina Program launched a website and the "MN Clean Marina Workbook" was finalized after being reviewed and edited by MN Pollution Control Agency and MN

Department of Natural Resources personnel. In December 2012, the Minnesota Clean Marina Program certified its first 6 Minnesota Clean Marina facilities. Applications for 9 additional marinas have been received. The certified marinas agree to protect fish and wildlife habitats through better marina and harbor design and habitat enhancement measures. [LINK](#)

Promoting Regional Water Quality Protection Initiatives

NEW YORK SEA GRANT (NYSG) facilitated the formation of a cross-jurisdictional watershed protection committee in order to mitigate water quality impacts from their activities in a coordinated fashion. NYSG's NEMO program explained the potential to reduce costs and improve stormwater management by leveraging expertise, equipment and funding. In August 2012, efforts came to fruition when 14 municipalities signed an agreement to work together to protect water quality and to establish the Oyster Bay/Cold Spring Harbor Protection Committee. SG staff assisted in the development of a successful grant application, which provided for a coordinator to lead the committee's efforts. The Committee plans to heighten awareness of the need to protect Oyster Bay and Cold Spring Harbor and to obtain increased funding for protective measures in 2013.

Septic System Replacements and Repairs Improving Water Quality

Working with the Charleston Soil and Water Conservation District, the state natural resource agency, and the state environmental health agency, **SOUTH CAROLINA SEA GRANT** (SCSG) assisted with organizing and conducting a number of workshops where participants received information on repairing, replacing, and maintaining septic systems in rural, economically disadvantaged, coastal communities. In addition, residents were educated about how activities at home could impact water quality in their community. As a result of this project and other related work, the state reported water quality improvements to the USEPA, and was able to re-open to harvest 883 acres of previously long closed shellfish beds in the project area. [LINK](#)

THEME: *Managing Water Resources*

Sea Grant Facilitated Master Plan Process Develops Municipal Growth Scenarios that Result in Revised Wastewater Agreement to Address Chesapeake Bay Pollution Control Requirements

Using a Community Viz-based land use model developed by **DELAWARE SEA GRANT** (DESG) and the weTable technology, municipal leaders and residents developed a growth scenario that focused on future wastewater infrastructure needs and assisted the Towns of Bridgeville and Greenwood in developing an approved Master Plan that may protect and improve local water resources while removing barriers for implementing acceptable practices.

76 Northwest Illinois Communities Positioned To Adopt Lawn-Watering Restrictions

Illinois-Indiana Sea Grant (IISG) provides resources and expertise for the Northwest Water Planning Alliance (NWP), a sub-regional water supply planning group comprised of 1.3 million residents northwest of Chicago, to meet its goals, including developing policies and plans that support or complement the larger regional water supply plan. As a result, a lawn watering restriction ordinance

was developed and approved by NWWA, which is comprised of 76 northwest Chicago suburban communities.

Lawn to Lake Leads To Water Savings

ILLINOIS-INDIANA SEA GRANT (IISG) worked with the Chicago Metropolitan Agency for Planning to develop and implement regional water supply/demand plan recommendations, including promotion of water conservation. IISG led Lawn to Lake, a program that promotes practices that reduce water use in lawn and landscape care to help communities address peak outdoor water demands. Lawn to Lake workshops and informational materials led to management changes on an estimated 18,000 lawn acres for a water savings of 984,665 gallons per day over the 2012 summer season (for a total of 88.8 million gallons).

THEME: *Adopting Green Infrastructure, Conservation, and Sustainability Practices*

30 Illinois Communities Implement Green Infrastructure Projects

ILLINOIS-INDIANA SEA GRANT (IISG) received funding from Illinois EPA to study the standards and costs of green infrastructure as a possible replacement or supplement to conventional urban stormwater infrastructure. The study found that, on average, green infrastructure practices are just as effective as conventional stormwater infrastructure, and are less expensive. Sea Grant's Martin Jaffe presented his final recommendations to the Illinois General Assembly. In 2012, the state General Assembly established a \$5 million discretionary fund to support green infrastructure projects in communities around the state. Between 2010 and 2012, the Illinois EPA awarded 30 Illinois communities \$15 million to implement green infrastructure stormwater management projects.

City of Semmes, Alabama Applies Conservation Policies to Comprehensive Plan

MISSISSIPPI-ALABAMA SEA GRANT CONSORTIUM funded (MASGC) PI's met with Semmes Mayor, Semmes Planning Commissioner, and the Alabama DEM Nonpoint Education of Municipal Officials Coordinator to discuss the benefits of low impact development (LID) and how LID policies can influence subdivision regulations based on MASGC-funded research results. The actions and policies suggested by MASGC PI's and others were adopted by the Semmes city council and planning commission. These policies will promote water quality, natural resource planning and low impact development in the new city.

Helping Counties Consider Development Strategies

Ongoing interactions by **NORTH CAROLINA SEA GRANT** (NCSG) extension specialists have assisted Currituck County officials to achieve water quality and other environmental protection efforts. In April 2012, Currituck County Commissioners adopted a new Unified Development Ordinance that contains sustainability incentives, riparian buffer requirements, wetland setbacks, and provisions for vegetation around stormwater ponds. As noted by the Currituck County Planning Director, NCSG's effort to organize development charettes and conduct a developer survey to raise awareness of environmentally sensitive development approaches helped county officials adopt these more progressive development standards. The results of the low impact development survey were integrated into the county's stormwater manual.

PASG Helps Landowners Preserve Environmentally Sensitive Land

To combat the environmental effects of urban sprawl, **PENNSYLVANIA SEA GRANT** (PASG) assisted partnering organizations and municipalities to secure funding to carry out simple acquisition and conservation easements to preserve open space, provide recreational access to area waterways, and protect environmentally sensitive areas in the Pennsylvania Lake Erie drainage basin. In 2012, PASG helped permanently conserve a total of 132.39 acres (real estate value of \$663,200), including 7,538 linear feet of stream frontage. Since 2003, PASG has assisted in raising funds to help conserve 1,662 acres of recreational and open space lands.

THEME: *Improving Community Resilience*

New Hampshire Sea Grant Shepherds a Coastal Watershed Community into Climate Adaptation Actions

In 2012 using leveraged funding, **New Hampshire Sea Grant** staff and partners applied a modified version of the NOAA Roadmap (a participatory community-based process) to assist Newfields, a coastal watershed community, to assess its climate vulnerabilities, identify priorities and take steps to improve its preparedness for climate effects. Newfields formed committees that developed an adaptation action plan with two resilience components: stormwater management and emergency preparedness. Since then, they have updated their master plan for climate effects and improved preparedness through a new emergency communication system.

THEME: *Improving Energy Efficiency*

Ocean Tides Sending Power To The Northeast Electrical Grid

The high tides of Cobscook Bay are ideal for the development of tidal power. **MAINE SEA GRANT** (MESG) connected the developer, Ocean Renewable Power Company (ORPC), to scientific expertise and technicians in the area for the implementation of fish, seabird, and marine mammal monitoring programs. Extension agents facilitated a transparent community process that linked stakeholders with researchers to share knowledge of the local marine resources that informed the scientific methodology. In September 2012, ORPC's Cobscook Bay Tidal Energy Project became the first ocean energy project in the United States that delivered electricity to the grid. In summary, Maine Sea Grant's research and extension have aided the permitting process of the first-ever grid-connected tidal power device in the U.S. by linking the developer with researchers and assisting in the creation of environmental monitoring and community engagement programs.

GOAL 3: Coastal citizens, community leaders, and industries that recognize the complex inter-relationships between social, economic, and environmental values in coastal areas and work together to balance the multiple uses and optimize environmental sustainability.

Key themes in the Sea Grant network's progress toward Goal 3 include fostering citizen stewardship by educating coastal citizens about their resources and encouraging civic engagement through regional studies. Sea Grant programs also demonstrated many examples of bringing together stakeholders to facilitate discussion and seek solutions for balancing multiple uses. Another notable achievement is the development and use of decision-support tools. The focus team highlighted the wide-variety of tools available to help communities with the diverse problems they encounter.

THEME: *Fostering Citizen Stewardship, Civic Engagement, and Environmental Education*

Coastal Alabama Rain Barrel Program Reduces Residential Stormwater Impacts

As part of the Alabama Rain Barrel Project, **MISSISSIPPI-ALABAMA SEA GRANT CONSORTIUM** (MASGC) conducted workshops for 135 citizens to build and maintain 55-gallon rain barrels at their residences. Workshops have enabled coastal residents to implement practical BMPs, reducing residential stormwater runoff. In addition to workshops, the Coastal Alabama Rain Barrel program has worked with partners to install LID demonstration sites and provide rain barrels for area schools and community gardens. Based on the current number of rain barrels and cisterns, it is estimated that 1,386,000 gallons of stormwater is being kept out of area waterways each year.

Public/Private Partnerships Establish Resources for Sustainable Community Visioning in the Lake Erie Watershed

From 2011-2012, **OHIO SEA GRANT** (OHSG) partnered with Reveille, Ltd., the City of Brook Park and the City of Waterville to plan, organize and implement community-wide sustainable visioning trainings and community participation sessions. Over 300 participants provided an overall community vision for the future that was developed into a comprehensive planning document for each community. OHSG supported the communities' efforts to learn about sustainable development and community visioning, financing mechanisms, decision-making options and the potential impact of new development in the Lake Erie watershed. As a result, two Lake Erie coastal communities integrated sustainable community visioning and resource development and conservation practices into community comprehensive plans.

Oregon Rain Garden Guide Produces Significant Learning and Action Outcomes to Reduce the Impact of Urban Development

OREGON SEA GRANT (ORSG) conducted workshops on rain garden design and produced the Oregon Rain Garden Guide to help Oregonians design and build rain gardens to treat stormwater runoff from their homes and businesses, thereby reducing stormwater's negative effects. More than 13,000 copies have been distributed by OSG and partners in both print and digital formats. OSG conducted an online

evaluation to learn how users (190 workshop participants) regarded the publication and its value. The survey results indicated that residents gained significant awareness and knowledge of the benefits of creating rain gardens and important learning and action outcomes resulted from OSG's production of the Oregon Rain Garden Guide.

THEME: Managing Coastal Resources with Decision-Support Tools

Sea Grant Introduces weTable and CommunityViz Technologies to Enhance Public Participation for Community-Level Land-Use Planning in Delaware

DELAWARE SEA GRANT'S (DESG) construction of a community land use model, based on CommunityVIZ software, used in conjunction with the weTable technology have enhanced public participation processes and community-level decision making for the development of improved land use plans. The key element of these tools is a process that provides useful geographic information, instantaneous data, comparative analysis and a visual representation of building structures. Both the land use model and weTable have been adopted for use by a number of State agencies and programs, including the Delaware Office of State Planning Coordination and the Delaware Department of Natural Resources and Environmental Control. In addition, DESG has assumed regional leadership in training others how to implement these participatory processes in public workshops to produce dynamic results.

Oregon Sea Grant Plays a Critical Role in Legislation That Establishes Marine Reserves along the Oregon Coast

OREGON SEA GRANT (ORSG) partnered with the Oregon Department of Fish and Wildlife (ODFW) to convene three community teams consisting of various stakeholders and organize more than 33 meetings to evaluate three proposed marine reserve sites. OSG also worked with the Scientific and Technical Advisory Committee (STAC) to establish minimum size and spacing considerations for marine reserves. The community teams each developed recommendations for marine reserves that were adopted by the Ocean Policy Advisory Council and forwarded to the Oregon legislature. Through OSG's leadership in this inclusive process, the state legislature in February 2012 passed Senate Bill 1510, which established the three new reserves, the first in the state. The bill also established seven marine protected areas near the three marine reserve locations.

The Wisconsin Coastal Atlas: Building a Coastal Spatial Data Infrastructure for Wisconsin

WISCONSIN SEA GRANT (WISG) developed the Wisconsin Coastal Atlas (WCA) as an innovative Web resource that helps people better understand coastal issues, share coastal data and inform decision-making about sustainable use of the Great Lakes. Coastal decision makers and property owners are benefitting from the Wisconsin Coastal Atlas, which integrates geospatial Great Lakes data. The site will also be ever evolving, ensuring its efficacy in the face of changing needs. Additionally, it's having an impact outside of Wisconsin, sparking discussion in the Great Lakes basin about building a networked regional atlas to facilitate marine spatial planning and decision making. [LINK](#)

THEME: *Facilitating Multiple Uses*

Dredging, Restoration and Area of Concern Mitigation

MINNESOTA SEA GRANT'S (MNSG) maritime transportation specialist Chairs the Duluth-Superior Harbor Technical Advisory Committee (HTAC) and is a member of the Dredging Subcommittee. He has worked on improving communications and coordination of effort. MNSG's leadership has helped the HTAC enable a major physical restructuring and improvement to the Erie Pier Recycle-Reuse Facility, as it changed from a Contained Disposal Facility and helped to create a new paradigm for dredge material handling through the US Army Corps of Engineers (USACE). Through this project, 20-years of dredge material will create 74 acres of new wetland, and provide habitat, public access, and recreational opportunities. In 2012, USACE made the 21st Ave. W. project a priority and allocated funds, which were supplemented with state agency and Great Lakes Restoration Initiative money. These activities have created an estimated \$5 million worth jobs in the engineering and construction fields for the Duluth-Superior port.

Advisory Services Helped Curb Beach Erosion

Local officials in Sister Bay, Wis., and Wisconsin Department of Natural Resources officials relied on **WISCONSIN SEA GRANT'S** (WISG) coastal engineering specialist to prevent the construction of a beach that would have been a costly mistake. If built to the scale submitted by the private engineering firm, the beach would have eroded and the nearby marina would have rapidly filled with sedimentation, requiring costly dredging. Both would have negatively affected a prime tourist destination in a coastal county that draws \$271.2 million in visitor spending each year and supports 2,921 jobs.

Developing Land Intensity Data for the St. Louis River Estuary and Watershed in Minnesota and Wisconsin

Remote sensing can assess changes in the Earth's environment. **WISCONSIN SEA GRANT** (WISG) harnessed this power to help decision makers to make choices about assets in the vulnerable ecosystem that is the St. Louis River estuary. This estuary feeds into Lake Superior, one of the world's most pristine lakes, yet it is still under pressure and is, in fact, a U.S. Environmental Protection Agency-designated Area of Concern. WISG researchers have synthesized information from satellite, aerial and ground sources to create a roadmap for adaptive management of the coastal areas of the estuary and watershed. A deep, GIS analysis of more than 1,400 land parcels has informed current decisions through a cost-effective, approach for stakeholders in Bayfield County, WI, and St. Louis County, MN. The process will also facilitate future decisions about restoring habitat, and enhancing economic and recreational opportunities.

SECTION TWO: Previous and Newly Identified Gaps

In addition to reviewing the progress toward the national strategic goals, the focus team reviewed the impacts to gauge whether previously-identified gaps (enumerated in the 2012 Annual Report) were being addressed, to identify additional areas needing attention, and to recognize emerging themes that cross-cut the strategic goals.

Previous Gaps

In the SCD 2012 Annual Report, the focus team identified three gaps from the 2011 Impacts:

- Working with underserved communities;
- Applying social science to local communities;
- Planning for sea level rise and Great Lakes water level changes.

This year, the Focus Team discussed whether the 2012 reported impacts better addressed these previously identified gaps.

Working with Underserved Communities

After evaluation, this subject continues to be a gap for Sea Grant. This was noted in a prior year's report, even through Sea Grant programs in the Gulf of Mexico were reaching out to underserved communities after major hurricanes and the Deepwater Horizon Spill. The focus team suggests that the network needs to shift its attention to not only vulnerable communities but also the underserved and economically disadvantaged populations. Also, greater investment needs to be made to raise existing activities towards an impact level. In some instances, Sea Grant may actually be conducting this work; it is just not the lens by which we look at our program. To add, some focus team members noted that when working through USDA's Cooperative Extension, working with rural and/or vulnerable communities is a major topic of focus and continues to work on reporting that information. The table below represents impacts and accomplishments that help to fulfill this gap.

2012 SCD Impacts		
Sea Grant Program	ID #	Title
South Carolina	17756	Septic System Replacements and Repairs Improving Water Quality
2012 SCD Accomplishments		
Sea Grant Program	ID #	Title
Maine	17168	Sea Grant supports successful growth at Herring Gut Learning Center

Applying Social Science to Local Communities

This subject area continues to be a gap for Sea Grant programs. Most of the qualitative research and outreach that the network conducts is in-fact social science, but this isn't apparent through reporting impacts. This was a major gap after evaluating the 2010 impacts, and in response, the National Sea Grant Office developed a Social Science Research National Strategic Initiative, which enhanced social science funding in FY11-12. Moreover, a Sea Grant Social Science Network has emerged to help Sea Grant professionals coordinate ideas and projects. The results of these activities should start to be

noticeable through impacts and accomplishments in the FY13 reporting year. The table below represents impacts and accomplishments that help to fulfill this gap.

2012 SCD Impacts		
Sea Grant Program	ID #	Title
Wisconsin	16682	The Wisconsin Coastal Atlas as a Foundation for Effective Spatial Decision-Support Tools Addressing Great Lakes Management
Hawaii	16843	US Sea Grant research funding leverages new NSF project focused on science and society
2012 SCD Accomplishments		
Sea Grant Program	ID #	Title
Hawaii	16466	UH Sea Grant researchers integrate physical and natural science with social science to develop policies and management approaches to promote the conservation and use of near-shore resources.
Illinois-Indiana	17491	Great Lakes Social Science Network trains the trainers
Wisconsin	16710	Geotools for Fostering Citizen Engagement and Understanding the Socio-Environmental Complexities of Great Lakes Coastal Estuaries

Planning for Sea Level Rise and Great Lakes Water Level Changes

The effects of climate change pose major problems for coastal communities. As such, the focus team is concerned about the lack of impacts relating to sea level rise and Great Lakes water levels that are reported under SCD. However, this apparent lack may be due to Sea Grant programs categorizing these activities in the Hazards Focus Area. Another limitation may be the lack of community interest. There are many impacts relating to water resources, green infrastructure, and sustainable planning, so perhaps impacts in the future will start to roll-in sea level rise and Great Lakes water levels has part of those outreach and extension activities. The table below represents impacts and accomplishments that help to fulfill this gap.

2012 SCD Accomplishments		
Sea Grant Program	ID #	Title
Rhode Island	17919	Keeping Current on Climate Change Science
Rhode Island	17917	Moving communities forward in climate change adaptation
University of Southern California	17360	Successful Adaptation: Identifying Effective Process and Outcome Characteristics and Practice-Relevant Metrics

Newly Identified Gaps

Educational Benefits of Outreach and Extension Activities

Most of the work Sea Grant conducts is through education. Whether it's educating a decision-maker on development policies, a port official on dredge material, an investor on the value of working waterfronts, or a child on the intricacies of the coastal environment, new information and knowledge is gained through Sea Grant's principles of engagement, outreach and extension. While this is the way Sea Grant operates, the exact benefits are not always captured at an educational level, nor as an impact.

As such, the focus team feels like this is an area of improvement for the network, and the network must figure out how to best present those real, tangible outcomes as part of Sea Grant's mission. This issue may be resolved as Sea Grant begins its 2014-2017 Strategic Plan, which has a new national Focus Area – Environmental Literacy and Workforce Development.

Improved Assessment and Reporting of Economic Benefits

There is a network-wide need to improve the reporting of economic impacts, as reflected in the submission of annual impact statements. There are clearly many economic benefits from Sea Grant outreach and extension activities, but many of the submitted impacts lack the specificity to make compelling statements. Recent research was conducted by Kate Farrow, a graduate student with Maine Sea Grant, to develop an approach for economic impact assessments for Sea Grant's extension, research, and education. Her work was supported by the national office and could be promoted within the network to provide specific guidance on the development of economic impacts. There is a great deal of difficulty in capturing economic benefits from SG work; especially trying to allocate how much of the economic benefits are directly/indirectly attributable to SG efforts.

Continuing Gaps

As previously discussed, working with underserved communities, applying social science to local communities, and planning for sea level rise and Great Lakes water level changes all continue to be gaps for the network.

SECTION THREE: Emerging Themes and Opportunities

Emerging Themes

In the SCD 2012 Annual Report, the focus team identified four emerging themes from the 2011 Impacts:

- Economic Valuation;
- Engagement with Ports & Marinas;
- Social Science Research;
- Research to Application to Business Start-Up.

This year, the focus team recognized several emerging themes from the 2012 impacts. These subjects provide tremendous momentum for increasing Sea Grant's effectiveness in making communities more sustainable.

Integrating Green Infrastructure

The use of green infrastructure is gaining momentum in the planning world. Also, communities are now more interested in incorporating living shorelines, wetlands, and other bioengineering tools into their coastal development patterns. Not only do these shoreline techniques help to preserve and restore natural environments, but they also help mitigate hazards as natural defenses. Integrating green infrastructure into community planning is a high priority for Sea Grant programs. Impacts were so numerous this year that a new theme was created to incorporate them into goal two.

Fostering Policy and Ordinance Changes

Change starts with leadership and this has been a Sea Grant emphasis since the Program's inception. Sea Grant programs work closely with leaders and decision-makers at the community and municipal levels to help foster actionable change. This can be seen through the creation of new planning guidance and the adoption of new policies and regulations.

Administrative Outcomes

Many impacts in the programs were that of great administrative work within the Sea Grant program itself. This means that state programs were successful in connecting key local actors, leveraging resources, partnering, and finding the proper funding channels to start and complete projects. Often, this type of activity is viewed as an accomplishment. However, the administrative work is so successful that it creates a local impact. The focus team noticed this achievement and wanted to highlight it.

Highlights and Opportunities

Network wide webinars

Much of the information that is compiled by the Knauss Fellow and analyzed by the Focus Team isn't presented to the entire Sea Grant network. Not only does that include this report, but also its content which includes a wide range of interesting and important resources and tools produced by the programs. It was suggested that the National Sea Grant Office report out new ideas, products and partnerships to the network.

National stories out of goal themes

An outcome of writing an impact statement is to tell a good story. Also, impacts portray the great work of the Sea Grant network. Oftentimes, individual impacts are made into news articles at the local level. These can then be broadcasted on state program, university and/ or National Sea Grant's websites. After reviewing impacts within the goals, the focus team finds that it would be advantageous to tie multiple impacts into one national story. This would give relevance to regional work, national initiatives, and subject matter themes. An example would be the impacts that help local governments with hazards planning and policy guidance, or helping communities adapt to climate change impacts.

Using performance measures

Since Sea Grant invests its time and energy into the creation and use of national performance measures, the focus team thought it would be relevant to include those statistics into this report.

General Focus Team Comments

The annual review enables the focus team to analyze, critique and help piece together a picture of Sea Grant's efforts in the SCD focus area at the national scale.

Just as in years past, the focus team discussed whether all of the 2012 reported impacts truly reached the level of "impact" instead of "accomplishments," though they acknowledged improvements in this distinction over earlier reporting years. To address this ongoing issue, the team suggested that the National Office try to frequently inform the network as to how impact information is used and where the reports are distributed. This may address the apparent disconnect between those who write the impacts and the use of this vital information to "better tell the Sea Grant story" to DOC and NOAA leadership, OMB examiners, other federal partners, and congressional interests. Impact-writing guidance has been available for several years on the NSGO's web site, but perhaps, the National Office can host another webinar series as a refresher/reminder for the network.

Another possibility is that the impacts be shared with regional communication leads to help tell the stories.

The focus team also observed that there has been considerable momentum building in themes and topics such as working waterfronts, clean marinas, land-use change analysis, water resources and coastal tourism and access. At the onset of the 2009-2013 Strategic Plan cycle, the focus team emphasized creating new partnerships and funding mechanisms to enhance the extent and quality of SCD-related activities. In the estimation of the group, that hard work has paid off as the impacts are starting to reflect those initial investments. The Focus Team would like to highlight this meaningful work in the eventual four-year review.